UTAH DEPARTMENT OF TRANSPORTATION

REGION ONE USER'S GUIDE

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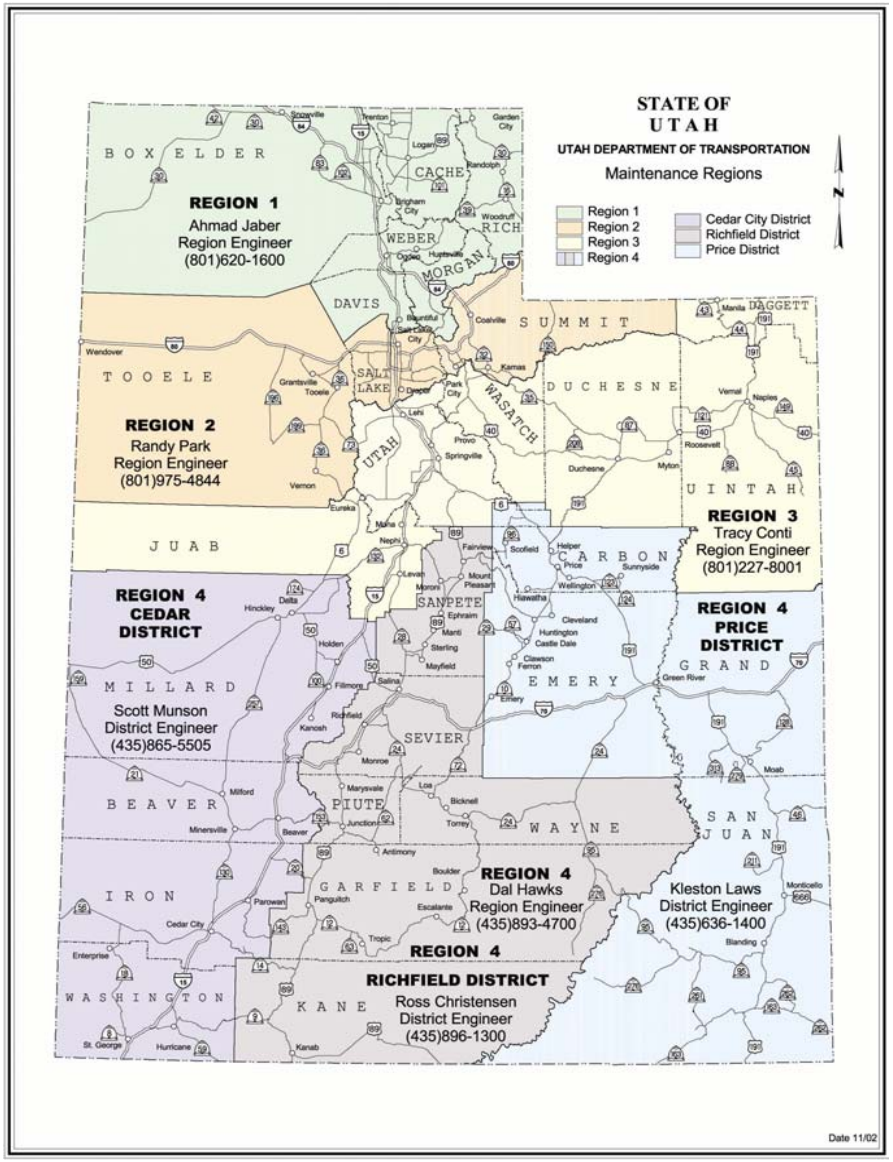
UDOT MISSION STATEMENT:

Quality Transportation Today -
Better Transportation Tomorrow

UTAH DEPARTMENT OF TRANSPORTATION



REGIONAL BOUNDARIES

I. INTRODUCTION

Purpose of this Document:

This document has been created to help our customers better understand the organization of Region One of the Utah Department of Transportation (UDOT) and how it can serve local governments and the public. It has been prepared to be user-friendly so anyone can easily locate assistance and obtain answers to transportation-related questions. This document will also be used internally to help Department personnel better understand divisional responsibilities. In this way, Department personnel will be able to provide better assistance to the public.

What is Region One?

The Utah Department of Transportation is divided into four geographical areas called regions. Region One covers the northern part of the state including the following counties: Davis, Weber, Morgan, Box Elder, Cache and Rich. The Region One office is located in Ogden. The map on the previous page illustrates region boundaries in the state.

Region One has approximately 220, professional, full-time employees. Our boundaries include two national forests, one national historic site, seven state parks and three state highways designated Scenic Byways.

Region One Vision Statement:

Region One Exceeds Customer Expectations

II. ORGANIZATION (WHO ARE WE?)

Organization Overview:

Region One is organized into the following major divisions: Project Management, Preconstruction, Construction, Materials, Operations and Administrative Services.

A Region One organizational chart is available on the Region One web site at www.udot.utah.gov/r1/PDF/ResponseList.pdf

An alphabetical Region One telephone directory is available online at www.udot.utah.gov/r1/Employees.htm

For further assistance in locating appropriate personnel, please contact the Region One receptionist at 801-620-1600.

III. FUNCTIONS (WHAT DO WE DO?)

Functions Overview:

This section provides a brief overview of organizational functions.

Region Director:

The Region Director provides leadership to preserve and improve the transportation infrastructure with a focus on quality, value, safety, effective management of traffic and public needs.

Project Management:

Project Management is comprised of Project Managers who are responsible for scope, schedule, budget and quality for assigned projects during concept development, design, construction and the first year of maintenance operations. Each is assigned projects in a geographical area and works with project stakeholders to achieve successful projects.

Preconstruction:

The purpose of the Preconstruction division is to help develop and design projects to meet transportation needs. This includes hydraulic engineering, environmental documentation, archaeology, landscape architecture, roadway design and engineering, right-of-way design, utilities, computer-aided drafting and technical writing. These divisions provide quality plans and specifications for UDOT projects meeting both federal and state requirements and guidelines.

Public Involvement:

Public Involvement is a new function in the Region One office. This position was developed so UDOT can more effectively involve the public in our processes and provide current information.

The Public Involvement Coordinator is responsible for Region public relations duties such as providing current and future project information, media relations, coordinating responses to concerns, giving presentations to local groups, organizing public meetings and ensuring that the public is informed and involved in transportation decision-making.

Construction:

Construction includes the project engineering and inspection of roadway/bridge construction, construction contract reviews, etc.

The Construction division is responsible for the administration and oversight of work contracted to private construction firms. This includes engineering, inspection, materials testing, certification of quantities, preparation of estimates and dispute settlement. This division ensures that all work performed by these firms meets UDOT standards. This division also provides engineering support to deal with unforeseen problems and changed conditions on UDOT projects.

Materials:

The Materials division is responsible for material design, certification and testing and pavement management. It also evaluates roadway pavement conditions and makes recommendations for improvements.

Operations:

The Operations division is responsible for snow removal and the maintenance of roads, shoulders, signing, pavement markings, Interstate lighting and signals. It is also responsible for safety loss control, the encroachment division and traffic engineering.

The following is a breakdown of individual responsibilities and a brief description of each position:

Operations Engineer - Responsible for the general oversight of the previously listed functions. The Operations Engineer has some contact with local governments, highway users, property owners and other agencies and participates in the Region Safety Committee and some Region design and construction functions.

Traffic and Safety Engineer - Responsible for the planning, design and operation of traffic control devices (traffic signals, signs, pavement markings), setting speed limits and the development of safety programs.

Safety / Loss Control Manager - Oversees all aspects of safety in the Region. Duties include inspecting Region property to ensure compliance with OSHA, MSHA, EPA, FHWA, State Risk Management, Department Safety/Loss Control and the Industrial Commission to provide a safe environment for the traveling public and UDOT employees; inspects maintenance and construction projects for safety; investigates and documents all fatal accidents; investigates hazardous material accidents and facilitates disposal of hazardous waste; handles complaints and investigates potentially hazardous roadway conditions that may cause damage to persons or property; investigates and researches all Region claims; and instructs safety courses.

Encroachment Permits Officer - Deals with all encroachments on state road right-of-ways such as access control, utility line crossings, interstate advertising, etc. The permits officer is responsible for issuing permits for all work done within UDOT right-of-ways and the follow-up inspection of this work to ensure it is done correctly. The Permits Officer is also responsible for blue stake inquiries within UDOT right-of-way and UDOT owned facilities.

Maintenance Area Supervisors - Responsible for all UDOT maintenance activities within their respective areas. They are the first line of contact for local governments and the general public regarding maintenance transportation issues.

Incident Management Team (IMT) - Provides assistance to stranded motorists along the major routes in Davis, Morgan and Weber Counties. Aids local emergency services with traffic control and clearing major obstacles from state highways. Stranded motorists can call *11 for assistance.

Each **Maintenance Station**, under the direction of the station supervisor, has a crew whose main goal is to maintain and preserve the state and federal highway infrastructure. Some of their tasks include clearing snow, lane leveling, crack sealing, applying seal coats, maintaining shoulders and drainage, roadway damage repair, landslide and flood damage repair and installation and repair of signs and delineator posts. They are also responsible for administering the Adopt-A-Highway Program in their respective areas. Maps of Region One maintenance station areas are available online at www.udot.utah.gov/r1/StationMap.htm

Administrative Services:

Administrative Services is responsible for accounting, computer/technical support, personnel services, facilities management and office support.
It is the business side of Region operations. The Administrative Team provides fiscal support services to all Region One divisions.

The major functions include budget requests and approvals, budget monitoring, technical accounting, Region payrolls, travel subsistence, internal Equal Employment Opportunities, personnel issues and human resource services, motor pool management, management of accounts payable / receivable and ensuring the proper operation of warehouses and their inventories. The Administrative Team also manages the petty cash fund and provides procurement authority for all supplies.

The overall purpose of this division is to provide timely and accurate support to all Region employees and external customers. The Administrative Team helps direct the public to the appropriate personnel to respond to questions and concerns.

IV. PROCESSES (HOW DO WE DO IT?)

Processes Overview:

This section summarizes the key processes we follow to complete specific functions.

Developing a Highway Improvement Program:

UDOT has implemented a new transportation decision-making initiative called Context Sensitive Solutions. It involves early and continuous public/stakeholder involvement. The concept blends the purpose, need and safety requirements of projects with sensitivity to scenic, aesthetic, historical, environmental and other community values.

Each year, UDOT Region One representatives meet with local citizens and city and county officials to determine roadway needs. Road projects with the greatest need are forwarded to the Region office in Ogden for review by the Region Roadway Management Team. The Roadway Management Team consists of the Region Director, Operations Engineer, Preconstruction Engineer, Pavement Management Engineer, Materials Engineer, Construction Engineer, Project Managers and Traffic Engineer. This team selects projects from the needs list that most benefit from available funding. There are several categories for highway funding: Interstate Maintenance, National Highways, Enhancement Projects, Signal Installation, Safety Projects and State Construction.

Roadway projects are primarily funded by federal and state motor fuel taxes, licenses and registration fees. Region One receives some federal highway funds through the Metropolitan Planning Organizations (MPOs), which are responsible for the preparation and approval of transportation improvements for their respective urban areas. Region One utilizes two of these MPOs: the Wasatch Front Regional Council (WFRC) for the Ogden Urbanized Area and the Cache Metropolitan Planning Organization (CMPO) for the Logan Urbanized Area.

Region One submits its recommendations to the UDOT Program office and these projects are then compiled with the recommendations from the other UDOT regions. Again, these projects are ranked statewide according to need and funding. The final selections are reviewed and approved by the State Transportation Commission and are then submitted to the Federal Highway Administration (FHWA) for final review and approval.

The final document is known as the Statewide Transportation Improvement Plan (STIP). The STIP provides funding for projects to be designed and constructed within the next three years. Highways in need of improvements that have not been included in the STIP are then placed on a list known as the unfunded needs list. Items on this list are eligible to be considered for advancement into the STIP in subsequent years.

A current STIP list is available on the UDOT home page at www.dot.utah.gov.

Designing a Project:

The Region One Preconstruction division is responsible for designing projects on the state highway system in Northern Utah. Projects that have been approved and are listed in the STIP are then eligible to be designed and advertised for construction.

Project design has many facets. Surveys are taken of the project area and environmental and archaeological studies are completed. Traffic data is considered and right-of-way, utility and safety issues must be resolved. Potential roadway alignments are investigated before specifications are written and applied.

The average project takes approximately three years to design. The following activities must be accomplished:

- -Environmental studies
- -Document completion
- -Negotiation of right-of-way purchases
- -Clearance of cultural sites
- -Public hearings to resolve concerns
- -The preparation of necessary plans in accordance with standards and specifications for each project

Region One is in the process of expanding the public involvement process of its projects to assure projects are consistent with local and regional values and needs within the project funding limits.

Obtaining, Testing and Certifying Materials for Use on Highways:

Representative samples are obtained from materials to be incorporated into the highway construction or rehabilitation project. These samples are then tested by certified technicians and equipment according to standard test procedures.

Test results are then compared to UDOT materials specifications. If the materials meet specifications, they are accepted and incorporated into the roadway. Otherwise, they are rejected or purchased at a reduced rate.

When the highway project is complete, test reports for all project materials are reviewed and certified. This process helps to ensure the quality of our highway system.

Obtaining an Encroachment Permit:

Those desiring to obtain an encroachment permit should contact the Region Encroachment Permits Officer. A small fee is required for the application process.

Region One Permits 801-620-1604
Cellular Phone 801-791-4988

Filing a Damage Claim:

To file a damage claim, a person should contact the Region Safety and Loss Control Manager in the region where the accident occurred. The Safety and Loss Control Manager can explain the process to file a claim.
Region One Safety & Loss Control Manager 801-620-1603

Requesting Safety Related Studies:

When requesting a safety study for concerns regarding lighted signals, street lighting, additional signing, speed limit changes, flashing lights, school crossing changes, etc., please contact the Region Traffic Engineer.

Region One Traffic Engineer 801-620-1607
Cellular Phone 801-726-3719

There are detailed descriptions contained in the following section that will help answer questions regarding:

- -Left Turn Signals
- -Pedestrian Crosswalks
- -Pedestrian Sidewalks
- -School Zones
- -Speed Limits
- -Traffic Signals

LEFT TURN SIGNALS

What determines where left turn signals are used?

Left turn phases at traffic signals are used to reduce delays and accidents to left turning vehicles. However, left turn phases may also increase delay to through traffic, decrease total intersection capacity and reduce the efficiency of traffic signal coordination.

In order to balance the need to serve left turns against the needs of all traffic at an intersection, UDOT has adopted minimum conditions called "warrants" for the installation of left turn signals. The warrants identify minimum traffic volumes, delays and traffic accident records that justify left turn signals.

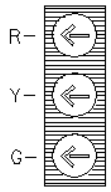
When left turn signals are requested, UDOT conducts a study to determine if conditions at the intersection meet the warrants. If so, the left turn signal is programmed for construction as funds become available.

Why are different types of left turn signals used?

There are two types of left turn signals commonly used by UDOT. The first type, called "exclusive only," consists of three sections displaying green, yellow and red left arrows.

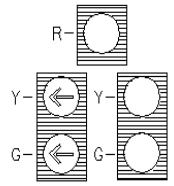
The second type of left turn signal is called an "exclusive/permissive" left turn and has five sections.

EXCLUSIVE ONLY LEFT TURN SIGNAL



With this type of left turn signal, a driver is legally permitted to make a left turn only when the green left arrow is displayed and all opposing traffic is stopped. When the red left arrow is displayed, it is illegal to turn left.
The "exclusive only" type of left turn signal is used at double left turns and at locations where limited visibility or high speed of opposing traffic could make it difficult to make a left turn safely.

EXCLUSIVE PERMISSIVE LEFT TURN SIGNAL



During the "exclusive" part of the left turn phase a green arrow is displayed to left turning drivers. All opposing traffic is stopped. During the "permissive" portion, a green circular indication is given and a motorist is allowed to make a left turn after yielding to the opposing traffic.

Why doesn't the left turn arrow come on every time when there is a car in the left turn lane?

Most exclusive/permissive left turn signals are designed to operate with "third car actuation." That is, the "exclusive" left turn arrow will not come on until there are at least three vehicles waiting in line.

In most cases, if there are only one or two vehicles turning left during one signal cycle, drivers are able to complete a left turn by finding gaps in the opposing through traffic. However, once the cue builds up beyond three vehicles, the "exclusive" left is called to help to clear the left turning vehicles.

At most intersections, left turn traffic is only 10 to 20% of through traffic volumes. Therefore, providing an exclusive left turn for one or two vehicles on every signal cycle would unnecessarily delay the greater majority of traffic passing through the intersection. Displaying the left turn arrow only after three cars are waiting in line helps to reduce the total delay for all motorists in the intersection.

How do I request a study for a left turn signal?

UDOT routinely conducts traffic studies as requested by local entities. To request a study, contact your municipality and have it submit a written request to the UDOT Traffic Engineer. The Region One Traffic Engineer can be reached at 801-620-1607.

PEDESTRIAN CROSSWALKS

Crosswalk means: (a) that part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or, in the absence of curbs, from the edges of the traversable roadway; and in the absence of a sidewalk on one side of the roadway, that part of a roadway included within the extension of the lateral lines of the existing sidewalk at right angles to the centerline; or (b) any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface.

This section answers some commonly asked questions about the use of marked pedestrian crosswalks and the legal duties of both drivers and pedestrians at crosswalks.

What are the laws that apply to the marking of crosswalks?

All fifty states and the federal government have participated in the development of uniform national guidelines that apply to all traffic signs, signals, and pavement markings. These guidelines are called the "Manual on Uniform Traffic Control Devices" and are referred to as the MUTCD.

The Utah Code requires the state's Transportation Commission to adopt a manual and use specifications that conform to the national MUTCD. Utah, as all states have done, has adopted the MUTCD for its state highways. Utah Code also directs the Department of Transportation to place and maintain its traffic control devices in accordance with this manual.

To encourage the uniform and safe use of marked crosswalks, the MUTCD contains several requirements on their design and placement. Some of these are as follows:

-Crosswalks should be marked at all intersections where there is substantial conflict between vehicle and pedestrian movements.

-Crosswalks should be marked at all intersections on established routes to schools where there is substantial conflict between vehicles and children, where students are encouraged to cross between intersections, or where students could not otherwise recognize the proper place to cross.

-Crosswalk lines should not be used indiscriminately. An engineering study should be performed before they are installed at locations away from traffic signals or STOP signs.

Why not put crosswalks everywhere people want to cross the street? Wouldn't that make it safer for pedestrians?

The results of such research implies that marked crosswalks may give pedestrians a false sense of protection and security. Furthermore, marked crosswalks may not be readily visible to a motorist at night, when wet, when obscured by snow or when worn by heavy traffic. For these reasons, installation of a marked crosswalk under unfavorable conditions could actually endanger the pedestrian.

At locations where traffic is not required to stop, UDOT will put in marked crosswalks only in certain situations where there is a substantial conflict between pedestrians and vehicle traffic. The crosswalk must be based on an engineering study as required by the MUTCD.

What conditions justify a marked crosswalk?

Where traffic volumes are low, pedestrians are able to get across a road safely during gaps in traffic. A crosswalk is not warranted in this case unless there is a very high number of pedestrians.

Where traffic volumes are high, it is much more difficult for a pedestrian to cross the street. Thus, there is more need to direct pedestrians to the safest place to cross the street and to alert motorists to the possible presence of pedestrians.

UDOT has adopted detailed numerical guidelines based on national research studies which define combinations of vehicular traffic and pedestrian traffic which warrant a crosswalk.

When a crosswalk is requested, UDOT conducts a study of both vehicle and pedestrian traffic as well as other safety factors such as speed and sight distance to determine if a crosswalk is warranted.

PEDESTRIAN SIGNALS

Pedestrian signals are used to help people walk across intersections safely by providing adequate time to cross the street. This section answers some commonly asked questions about pedestrian signals.

What do the signals mean?

STEADY WALK OR SYMBOL- Pedestrians may cross the street (watch for turning vehicles)

FLASHING DON'T WALK OR SYMBOL- Pedestrians already in the street should continue across; other pedestrians should not leave the curb.

STEADY DON'T WALK OR SYMBOL- Pedestrians should not leave the curb.

Why does the WALK signal change before I get across the street?

The WALK signal tells you that it is legal to start. Once you have begun to cross, the flashing DON'T WALK is timed to get you safely across. The vehicle signal in your direction will remain green while the flashing DON'T WALK is on. The flashing DON'T WALK tells pedestrians who have arrived too late at the crosswalk that it is no longer permissible to start.

Why is it necessary to push the button to cross the street? Why can't I just wait for the next green light?

At some traffic signals, pedestrian push buttons are not necessary because the WALK signal is programmed to occur with every green light. This has been done at some intersections because of the high number of pedestrians crossing the street on a regular basis.

However, at most traffic signals, the pedestrian WALK signal will only appear if the button is pushed. A green light alone does not guarantee that you will have enough time to safely walk across the street. The timing of the green light may be controlled only by the passage of vehicles and may not be long enough for pedestrians. Pushing the button and waiting for the WALK signal will ensure that you have enough time to cross safely.

Remember, it is illegal under Utah state law to cross when the signal says "DON'T WALK".

Why doesn't the WALK signal come on immediately when I push the button?

Traffic signals are programmed to give green signals to traffic movements in a certain sequence. At a busy intersection, it may take up to two minutes to go through a complete cycle which serves everyone.

When you push the button, the traffic signal controller records your request for the WALK signal and schedules this request into its cycle. The WALK signal will appear after all of the traffic movements already scheduled ahead of you are completed.

When I have the WALK signal, do I have the right-of-way over turning vehicles?

The WALK signal gives you the legal right-of-way while crossing the street. However, that will not protect you from careless drivers who do not know or disobey the law. Always watch for turning vehicles when crossing the street. Make eye contact with drivers to make sure they see you. Other suggestions for safely crossing the street at a traffic signal are:

- Stay in the crosswalk.
- Walk promptly, but don't run.

REDUCED SPEED SCHOOL ZONE

In 1992, the Utah Legislature passed the "School Zone Safety Act." This act included a number of measures to improve the safety of pedestrians in the vicinity of Utah's schools. Under this law, UDOT has developed specific standards for the location, design and operation of school zones. This brochure provides a brief summary of the state law and the standards pertaining to school zones.

What is a "Reduced Speed School Zone"?

A "Reduced Speed School Zone" is defined as an area in advance of a school crosswalk extending from a school speed limit sign while the warning lights are operating to an End School Zone sign. The Reduced Speed School Zone may abut the school property or it may be at a remote school crossing location, which may include signalized intersections.

What are the laws pertaining to school zones?

The "School Zone Safety Act" contains the following important provisions:

- Requires UDOT and local highway authorities to establish reduced speed school zones at schools that meet the requirements for a school zone,
- Requires schools to provide trained crossing guards or bus shuttle service at all school zones,
- Requires flashing lights on school speed limit signs during hours of operation,
- Increases the fines for speeding in a school zone. Fines range up to $275 for a first offense and up to $525 for subsequent offenses, and
- Requires UDOT to develop a manual and specifications on crossing zones for a uniform system for the location and operation of school zones, crossing guards and access plans.

How is a "Reduced Speed School Zone" established?

UDOT has developed specific standards for school zones as required by the Utah Code. These standards have been adopted as a supplement to the "Manual on Uniform Traffic Control Devices", which, by law, guides the placement and use of all traffic signals, signs and pavement markings on public streets and highways.

An important objective in providing for safe highways and pedestrian crosswalks is the concept of *uniformity*. Thus, identical standards are applied to all school zones throughout the state so that drivers become familiar with the standard location, signs and operation of a school zone.

"Warrants" have been established for reduced speed zones to determine when it is appropriate to create a 20 MPH speed limit. The reduced speed limit cannot be used indiscriminately as its use at an improper location would result in disrespect for the law.

The following criteria must be met for the establishment of a reduced speed school zone:

- A marked school crosswalk is present. Marked crosswalks may be installed only if there are at least 10 school-aged pedestrians in the morning or afternoon and there is a minimum traffic volume of 500 vehicles per day, AND
- There is a need for school zone protection as determined by an engineering study. The study considers the number of pedestrians, the speed of vehicles and the number of gaps in traffic.

What is the meaning of signs used at a school zone?

The "School Advance" sign is used several hundred feet before the crosswalk to warn the driver.

The "School Crossing" sign is placed at the crosswalk.

The "School Speed Limit" sign is placed in advance of the crosswalk. The speed limit of 20 MPH is in effect only when the attached lights are flashing.

The "End School Zone" sign is placed 50 feet after the school crosswalk. A driver may resume speed only at a point even with this sign.

SPEED LIMITS

The setting of speed limits on Utah's highways and streets is often a controversial and emotional issue. Many citizens believe that lowering speed limits will improve traffic safety on their street or in their community. On the other hand, speed limits that are unrealistic are often disregarded by a majority of motorists who are normally careful and law-abiding drivers.

This section describes Utah's laws that apply to speed limits on our highways and the procedures for establishing posted speed limits.

What is the law?

All drivers must always obey both the "basic speed law" and the "*prima facie*" speed limits. Utah's basic speed law (Section 41-6-46 of the Utah Code) is similar to that throughout the United States and says:

> *A person may not operate a vehicle at a speed greater than is reasonable and prudent under the existing conditions, given regard to the actual and potential hazards then existing, including when...*

In the absence of posted speed limits, the Utah state law also sets legal speed limits on different classes of highways which are called the *prima facie* speed limits. These speed limits are as follows:

- Reduced speed school zone - 20 MPH
- Urban districts - 25 MPH
- Other locations - 55 MPH

State law defines "urban district" as "territory contiguous to and including any street in which the structures devoted to business, industry or dwelling houses are situated at intervals of less than 100 feet for a distance of a quarter of a mile or more."

In the absence of posted speed limits, speeds that are higher than those above are considered *prima facie* evidence that the driver is traveling at a speed that is "greater than is reasonable and prudent."

At some locations, UDOT may determine that the prima facie speed for that class of highway is not reasonable or safe for the particular conditions on a section of highway. For example, the 55 MPH speed limit may not be reasonable in a non-urban developed area with homes and driveways.

State law allows UDOT to establish a new *prima facie* speed for specific locations on state highways when it is based on an "engineering and traffic investigation." In such cases, the location on the state highway is typically called a "speed zone" and the speed limit is referred to as the "posted" speed limit.

Misconceptions About Speed Limits

When concerned about highway safety problems, citizens often ask to lower the speed limit. In many cases, the posting of a lower speed limit on a section of highway is an appropriate measure to alert drivers of a change in road conditions or of hazards that may not be readily apparent.

However, there are many misconceptions that posting a lower speed limit will automatically decrease the speed of traffic, reduce accidents and increase safety. Setting an unrealistically low speed limit that is not appropriate for road conditions generally has no effect on vehicle speeds or safety. This has been demonstrated in numerous "before and after" research studies of speed limit changes.

The majority of drivers tend to drive at a speed that their experience indicates is safe for the road conditions. An arbitrary and unrealistic speed limit may be disregarded and result in disrespect for the law by normally law-abiding drivers.

How are Speed Zones Established?

The procedures for setting of speed limits are based on the following principles of traffic law:

- The majority of motorists drive in a safe and reasonable manner.
- The normally careful and competent actions of a reasonable person should be considered legal.
- Laws are established for the protection of the public and the regulation of unreasonable behavior of a few individuals.
- Laws cannot be effectively enforced without the consent and voluntary compliance of the majority.

For these reasons, realistic and practical speed limits are based upon observations of the actual driving behavior of the public. Experience has shown that setting a speed limit at the "85th percentile speed" (the speed not exceeded by 85% of the drivers) reflects the behavior of the majority of drivers and results in a safe and reasonable speed limit.

TRAFFIC SIGNALS

UDOT receives many requests from citizens and local government officials to install new traffic signals.

Traffic signals are often viewed by many citizens as the best solution to traffic problems at busy intersections. For example, citizens may ask for the installation of a new traffic signal to help them safely enter or cross a busy highway. However, traffic signals also have some disadvantages and may be installed only under certain conditions.

This section describes some of the advantages and disadvantages of traffic signals and answers some commonly asked questions about the process for installing traffic signals

Advantages of Traffic Signals

Traffic signals provide for the orderly movement of traffic through an intersection by alternating the right-of-way for conflicting traffic movements. By creating orderly traffic flow, the signal can increase the overall capacity of the intersection to handle traffic.

A signal also can be useful in interrupting a heavy traffic flow to provide safe gaps for side street traffic to enter or for pedestrians to cross a busy street. Traffic signals tend to reduce some types of accidents, most noticeably the more severe right angle accidents. Under some conditions of favorable spacing, signals can be effective in maintaining an orderly flow of traffic along a street at a safe and reasonable speed.

Disadvantages of Traffic Signals

Traffic signals are not "cure-alls" for problems at an intersection.

While many people recognize that traffic signals are effective in reducing right-angle accidents, few realize that signals can significantly increase rear-end accidents. Installation of a new traffic signal may actually increase the total number of accidents at an intersection if the increase in rear end accidents exceeds the decrease in right angle accidents.

Unjustified traffic signals can also result in excessive delay to through traffic with increased congestion, air pollution, gasoline consumption and diversion of traffic to local residential streets.

What determines where traffic signals are installed?

The installation of traffic signals is based upon minimum conditions called "warrants", as described in the "Manual on Uniform Traffic Control Devices" (MUTCD).

The MUTCD is a national standard developed by all fifty states and the federal government. The purpose of the standards is to ensure uniformity in the design of traffic signals, signs and pavement markings throughout the country. Utah Code has adopted the MUTCD and directs UDOT to place and maintain its traffic control devices in accordance with the MUTCD.

There are several considerations in the MUTCD traffic signal warrants which may justify the installation of a signal. These include minimum one hour, four hour and eight hour traffic volumes; minimum pedestrian volumes; school crossings; and traffic accident experience.

What is the process to have a new traffic signal installed?

When a new traffic signal is requested, UDOT conducts a study to determine if conditions at the intersection meet the minimum warrants and if a traffic signal will improve the intersection safety and efficiency. If so, the traffic signal is programmed for design and construction as funds become available.

Before the signal can be installed, thorough engineering studies and designs must be completed. In some cases, acquisition of small right-of-way parcels may be needed to locate the signal equipment at the intersection or minor road widening may be needed.

Following completion of the design plans, the signal project is publicly bid and awarded to an electrical construction contractor to install. UDOT presently has a large backlog of traffic signal projects and is working to have them built as quickly as possible.

How much does a signal cost?

A typical traffic signal installation costs about $200,000. This includes some costs for miscellaneous work such as sidewalk repair, wheelchair ramps and pavement markings which are often required with new signals.

UDOT
GOING THE EXTRA MILE